

IN THE CLAIMS:

Please amend Claim 7, as follows.

1-6. (Withdrawn)

7. (Currently Amended) A diffraction optical element in which a plurality of diffraction gratings are laminated, comprising:

a first diffraction grating which is formed on a curved surface with a material of a predetermined dispersion, wherein an imaginary surface including tips of grating portions of said first diffraction grating is a curved surface; and

D1  
a second diffraction grating which is formed on a curved surface with a material of a dispersion different from that of said first diffraction grating and adjacent to said first diffraction grating arranged with an interval between said first diffraction grating and said second diffraction grating, wherein an imaginary surface including tips of grating portions of said second diffraction grating is a curved surface,

wherein the pitches at positions of tips of corresponding grating portions of said first and second diffraction gratings are equal over the area of use.

D2  
8. (Previously Amended) A diffraction optical element according to Claim 7, wherein substrates on which said diffraction gratings are formed are joined together in the non-grating area of each of said diffraction gratings.

9. (Previously Amended) A diffraction optical element according to Claim 7, wherein at least one of said laminated diffraction gratings has at least one diffraction grating differing from it in the direction of the grating shape of the grating portion.

10. (Previously Amended) A diffraction optical element according to Claim 7, wherein the wavelength area used is a visible range.

11. (Previously Amended) A diffraction optical element according to Claim 7, wherein at least one of said plurality of diffraction gratings is such that the material forming said diffraction gratings is the same as the material forming a substrate on which said diffraction gratings are provided.

12. (Previously Amended) A diffraction optical element according to Claim 11, wherein said substrate has lens action.

13. (Previously Amended) A diffraction optical element according to Claim 7, which is formed on a cemented surface of a cemented lens.

14. (Previously Amended) A diffraction optical element according to Claim 7, wherein said plurality of diffraction gratings are laminated so that the diffraction efficiency of a particular order may heighten in the entire wavelength area used.

15. (Previously Amended) An optical system using the diffraction optical element according to Claim 7.

16. (Original) An optical system according to Claim 15, which is an imaging optical system.

17. (Original) An optical system according to Claim 15, which is an observation optical system.

18. (Previously Amended) A diffraction optical element according to Claim 7, wherein said first and second diffraction gratings are disposed via an air layer.